PRINTER RUSH
(PTO ASSISTANCE)

Application :	09/688286	**Examiner :**	Eyler	**GAU :**	1646
From:	NPB	**Location:**	(IDC) FMF FDC	**Date:**	12/13/04

Tracking #: 05983015 Week Date: 7/19/04

DOC CODE	DOC DATE	MISCELLANEOUS
☑ 1449	04/08/03	☐ Continuing Data
☐ IDS		☐ Foreign Priority
☐ CLM		☐ Document Legibility
☐ IIFW		☐ Fees
☐ SRFW		☑ Other
☐ DRW		
☐ OATH		
☐ 312		
☑ SPEC	10/13/00	

[RUSH] **MESSAGE:** (1) Please verify ~~bold-down~~ subscript data (illegible) on original page 13, lines 1 and 2.

(2) Amended paragraph on page 37, line 3 is incomplete (see SPEC dated 02/04/03).

(3) Amended claim 43 on Examiner's Amendment (NOA dated 04/08/03) is illegible and incomplete.

(4) Last entry on pages 2 and 3 of 1449 dated 04/08/03 are illegible and incomplete – see attached pages. Please provide clearer copy.

Thanh Tuyen

[XRUSH] **RESPONSE:**

INITIALS:

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04

In addition, peptides can be conformationally constrained by, for example, incorporation of C_α and N_α-methylamino acids, introduction of double bonds between C_α and C_β atoms of amino acids and the formation of cyclic peptides or analogues by introducing covalent bonds such as forming an amide bond between the N and C termini, between two side chains or between a side chain and the N or C terminus.

These types of modifications may be important to stabilise NR4 if administered to an individual or for use as a diagnostic reagen

The present invention further contemplates chemical analogues of NR4 capable of acting as antagonists or agonists of NR4 or which can act as functional analogues of NR4. Chemical analogues may not necessarily be derived from NR4 but may share certain conformational similarities. Alternatively, chemical analogues may be specifically designed to mimic certain physiochemical properties of NR4. Chemical analogues may be chemically synthesised or may be detected following, for example, natural product screening.

The identification of NR4 permits the generation of a range of therapeutic molecules capable of modulating expression of NR4 or modulating the activity of NR4. Modulators contemplated by the present invention includes agonists and antagonists of NR4 gene expression or NR4 protein activity. Antagonists of NR4 gene expression include antisense molecules, ribozymes and co-suppression molecules. Agonists include molecules which increase promoter ability or interfere with negative regulatory mechanisms. Agonists of NR4 protein include antibodies, ligands and mimetics. Antagonists of NR4 include antibodies and inhibitor peptide fragments. Where a cell co-expresses NR4 and IL-4 receptor α-chain, agonists and antagonists may target the IL-4 receptor α-chain.

identical between the predicted murine and human proteins are indicated by (*). DNA encoding the murine signal sequence is underlined, with A26 or T27 being the predicted first amino acid of the mature protein.--

Please amend the paragraph beginning at page 33, line 12, as follows:

--Figure 10 is a representation of the N-terminal amino acid sequence of murine NR4 (SEQ ID NOS: 10 and 11).--

Please amend the paragraph beginning at page 37, line 3, as follows:

--A library was constructed λZAP II using ApoI digested genomic DNA from embryonal stem cells and screened with a pool of ^{32}P-labelled oligonucleotides encoding the amino acid sequence Trp-Ser-Asp-Trp-Ser (SEQ ID NO: 12) found in many members of the haemopoietin receptor family. One hybridising bacteriophage clone was found to contain a sequence that appeared to encode part of a novel member of the haemopoietin receptor family. This receptor was given the operational n ame NR4. The sequence of the genomic clone was used to isolate cDNAs encoding NR4 from WEHI-3B cell, peritoneal macrophage, bone marrow, skin and kidney libraries. A composite of the nucleotide sequence (SEQ ID NO: 1) and predicted amino acid sequence (SEQ ID NO: 2) of these cDNAs is shown in Figure 1. The NR4 cDNA is predicte4d to encode for a protein of 424 amino acid residues, containing a putative signal sequence and transmembrane domain. The extracellular region of the protein contained an immunoglobulin-like domain (amino acids 27-117), in addition to a typical haemopoietin receptor domain (amino acids 118-340) which includes four conserved cysteine residues and the characteristic Trp-Ser-Asp-Trp-Ser motif (Figure; in bold as WSXWS). The cytoplasmic tail of

incomplete

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NFR
4/3/03
CE, entered by DMT

DETAILED ACTION

1. Amendments filed 2/4/03 (paper number 13), 3/24/03 (paper number 15) and 3/28/03 (paper number 16) have been entered in part.

2. The rejections of record are withdrawn in view of Applicants arguments and Amendments filed in paper numbers 13, 14 and 16.

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 3/24/03 (paper number 15) have been approved. The application having been allowed, formal drawings are required in response to this Office Action.

Examiner's Amendment

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Peter Bernstein on 3/28/03.

In the Claims:

1. Amend claims 43-48 as follows:

claim 43 missing data/illegible

claim 36 or 37 and at least one of a pharmaceutically acceptable carrier or a diluent.

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

LIST OF PRIOR ART CITED BY APPLICANT

(Use several sheets if necessary)

Atty. Docket No.	Serial No.
11373A	Unassigned
Applicant	
Tracy Willson, et al.	
Filing Date	**Group**
Herewith	1646

JC917 U.S. PTO 09/688206 10/13/00

U.S. PATENT DOCUMENTS

EXAMINER INITIAL*		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (if appropriate)
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AG							
	AH							
	AI							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

NW	AJ	Obiri, et al. "The IL-13 Receptor Structure Differs on Various Cell Types and may Share More than One Component with IL-4 Receptor", The Journal of Immunology:756-764, Jan 15, 1997
	AK	Smerz-Bertling, et al. (January 13, 1995) "Both Interleukin 4 and Interleukin 13 Induce Tyrosine Phosphorylation of the 140-kDa Subunit of the Interleukin 4 Receptor", The Journal of Biological Chemistry 270(2):966-970.
	AL	Vita, et al. (February 24, 1995) "Characterization and Comparison of the Interleukin 13 Receptor with the Interleukin 4 Receptor on Several Cell Types", The Journal of Biological Chemistry 270(8):3512-3517.
		Zhang, et al. (April 4, 1997) "Identification, Purification and

EXAMINER _____ DATE CONSIDERED _____

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	AA						
	AB						
	AC						
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	AF						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AG							
	AH							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

NSB	AI	Durawski, et al. (1993) "Receptors for Interleukin-13 and Interleukin-4 are Complex and Share a Novel Component that Functions in Signal Transduction", The EMBO Journal 12(7):2663-2670.
	AJ	Durawski, et al. (June 9, 1995) "The Primary Binding Subunit of the Human Interleukin-4 Receptor is also a Component of the Interleukin-13 Receptor", The Journal of Biological Chemistry 270(23):13869-13878.
	AK	D. Caput, et al. (1996) "Cloning and Characterization of a Specific Interleukin (IL)-13 Binding Protein Structurally Related to the IL-5 Receptor a Chain" Journal of Biological Chemistry, 271(28):16921-16926.
	AL	N.A. Nicola (1994) Guidebook to Cytokines and Their Receptors, Oxford University Press: New York, New York.
	AM	N. Vita, et al. (1995) "Characterization and Comparison of the Interleukin 13 Recpetor with the Interleukin 4 Receptor on Several Cell Types" The Journal of Biological Chemistry 270(8):3512-3517.
	...	N. Harada, et al. (1990) "Expression Cloning of a cDNA Encoding the Murine Interleukin [illegible] Based on Ligand Binding" Proc. Nat'l. Acad. Sci., USA 87:857-861.

EXAMINER [illegible] DATE CONSIDERED [illegible]

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.